

# Cisco 2600-DC Series

## Modular Access Platform

**Cisco Systems Extends Versatility, Integration, and Power of the Cisco 2600 Series Modular Access Platform series to Service Provider central offices and Data Communications Networks.**

As part of a scalable Data Communications Network (DCN) solution, including the Cisco Catalyst® 2950G-24-DC switch, Catalyst 2924M-XL switch, Catalyst 4003-DC switch, Cisco 3662-AC/DC-CO, Cisco 3640, Cisco 3631-CO, and Cisco 2600 Series modular access platforms, the Cisco 2600 Series supports central office (CO) serial, X.25 and Internet protocol/open system interconnection (IP/OSI) interfaces for operations management in Service Provider, Inter-Exchange Carrier (IXC), and Post, Telephone and Telegraph (PTT) networks. The Cisco DCN solution supports synchronous optical network/synchronous digital hierarchy (SONET/SDH) network element (NE) connectivity for alarm monitoring and control, remote provisioning, and software download. Other operations systems network applications include local number portability and billing data collection. In addition, competitive local exchange carriers (CLECs) can use the Cisco 2600 in small point of presences (POPs) or central office colocations for digital subscriber line access multiplexers (DSLAMs), voice switches, and transmission operations networking.

### New Models in Cisco 2600 DC Family: 2600XM-DC

The new Cisco 2600XM-DC models are based on the current Cisco 2600 platform architecture, and extend the performance by as much as 33%. The new models also increase default platform memory and provide increases in memory capacity at the same price points when compared to the current Cisco 2600 models. The new XM functionality provides the same proven technology of the current Cisco 2600 Series platforms, including Cisco IOS® software mainline feature support and the modularity of Network Modules (NMs), WAN Interface Cards (WICs) and Advanced Integration Modules (AIMs). Service Providers considering the Cisco 2600 for branch office applications should now regard the Cisco 2600XM-DC as the preferential platform for delivering high performing, flexible solutions to branch and remote offices.

The modular architecture of the Cisco 2600 Series allows interfaces to be upgraded to accommodate network expansion or changes in technology as new services and applications are deployed. Service providers can integrate the functions of multiple,



separate devices into a single, compact unit, thereby reducing the complexity of managing DCN infrastructures. For example, the Cisco 2600 Series supports connectivity to legacy asynchronous and X.25 devices as well as standards-based IP devices, facilitating a graceful migration from legacy to next generation network elements. Driven by a powerful RISC processor, the Cisco 2600 Series provides the extra power needed to support the advanced quality of service (QoS), higher bandwidth and security features required for connecting to today's Network Operation Center (NOC) systems.

The Cisco 2600 Series meets service provider's critical physical requirements for equipment depth fitting right alongside transmission equipment on standard 12 inch deep racks, and occupying only 1RU in height. Offered in six base configurations supporting fixed single or dual local-area network (LAN) ports, each Cisco 2600 also includes one network module slot, two wide-area network (WAN) interface card slots and one advanced integration module (AIM) slot. Rear access cabling allows easy connectivity; the modular design shares a large number of modules with the Cisco 3600 and 3700 Series, permitting fast servicing of Field Replaceable Units (FRUs). DC, AC and redundant AC power supply adapter modules are also field replaceable. Network Equipment Building Standards (NEBS) Level 3/ETSI compliance is achieved when used with the Cisco 2600's optional NEBs/ETSI kit. Common Language Equipment Identification (CLEI) coding is provided for easy identification and tracking of central-office equipment. Robust network management capability for the Cisco DCN solution is achieved by using the CiscoWorks, Cisco View and Cisco View Stack Management Interface applications.

Figure1  
Cisco 2600 Series Modular Access Routers



### Key Benefits

The Cisco 2600 Series lowers network lifecycle costs with the following benefits:

- *Investment protection*—Support for field-upgradeable modular components on the Cisco 2600 Series allows customers to easily change network interfaces without a “forklift upgrade” of the entire branch office network. The AIM slot(s) further protect investments by offering the expandability to support advanced services such as hardware-assisted data compression, data encryption, ATM data/voice access, or DSP digital voice applications.



- *Network Consolidation*—By integrating the functions of channel service unit/data service units (CSU/DSUs), integrated services digital network (ISDN) Network Termination (NT1) devices, firewalls, modems, compression or encryption devices, voice/data gateways and other equipment found in service provider COs and DCNs into a single, compact unit, the Cisco 2600 Series provides a space-saving solution.
- *Simplifies network management and training*—By using CiscoWorks and Cisco View, the Cisco 2600 and Catalyst 2950G-24-DC switch can be managed remotely as a single entity, eliminating the need to telnet or establish connections to multiple network peripherals using different management tools. These same tools also manage the higher performance Catalyst 2924M XL and the Cisco 3662-AC/DC-CO.
- *Multiservice voice/data integration*—The Cisco 2600 Series reinforces the commitment by Cisco to integrate multiservice voice/data integration capabilities to its product portfolio, enabling the consolidation of parallel networks with bandwidth-efficient packet telephony. Using the Voice/Fax modules, the Cisco 2600 may be deployed in both Voice over IP (VoIP) and Voice over Frame Relay (VoFR) networks. The packet voice trunk network module supports up to 60 simultaneous voice calls in a Cisco 2600 as well as supporting routing and other services. When used with the ATM-AIM, VoATM using AAL2 or AAL5 can be deployed.
- *Business-Class DSL Connectivity*—The introduction of the WIC-ADSL and WIC-1SHDSL, offers business-class broadband service with scalable performance, flexibility, and security for branch and regional offices. The Cisco 2600 Series provides an ideal solution for a variety of businesses requiring high-speed business-class DSL connectivity on a secure, high-performance modular platform.

#### Cisco 2600 Series Chassis Options

Each of the Cisco 2610 through Cisco 2651 and XM DC versions supports one Network Module (NM) slot, two WAN Interface Card slots, and one AIM slot, along with one or two fixed LAN ports, one asynchronous auxiliary port and one console port. These slots share more than 50 different modules across four Cisco product lines—the Cisco 1700 Series, the Cisco 2600 Series, the Cisco 3600 Series and the Cisco 3700 Series.

- The Cisco 2600 DC Series is available in a number base configurations: CISCO2610/11-DC
- CISCO2610XM/11XM-DC
- CISCO2612-DC
- CISCO2620/21-DC
- CISCO2620XM/21XM-DC
- CISCO2650/51-DC
- CISCO2650XM/51XM-DC

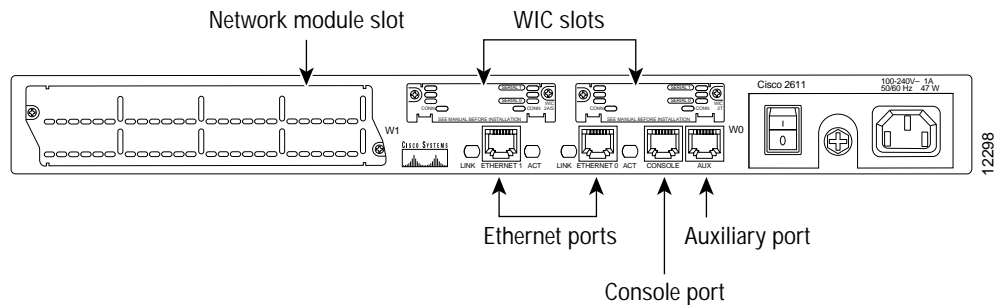
*Refer to Table 8, Cisco 2600 Series System Specifications for detailed product information*

Note: AC power supply versions are also available.

The WAN interface cards available for the Cisco 1600, 1720, 2600, 3600, 3700 platforms support a variety of serial, Integrated Services Digital Network Basic Rate Interface (ISDN BRI), and integrated CSU/DSU options for primary and backup WAN connectivity. Network modules available for the Cisco 2600 and 3600 Series support a broad range of applications, including multiservice voice/data integration, analog and ISDN dial access, and serial device concentration. The internal Data Compression AIM for the Cisco 2600 Series off-loads the task of performing high-speed data compression from the Cisco 2600's main CPU, allowing compressed data throughput of up to 8-Mbps while preserving external interface slots for other applications.



Figure 2  
Cisco 2600 Series Back Panel View (Cisco 2611 Shown)



## Features and Benefits

The Cisco 2600 Series brings a cost-effective combination of versatility, integration, and power to service providers with the features listed in Table 1.

Table 1 Features and Benefits of the Cisco 2600 Series

Features	Benefits
<b>Versatility and Investment Protection</b>	
Modular Architecture	<ul style="list-style-type: none"><li>• Network interfaces are field-upgradable to accommodate future technologies while providing a solution to meet today's needs</li><li>• Additional interfaces can be added on a "pay-as-you-grow" basis to accommodate network growth</li><li>• Wide variety of interfaces and port densities for IP, ATM, Frame and TDM networks to support any Central Office environment</li></ul>
Broad array of WAN Interface Cards and Network Modules Shared with Cisco 1600, 1700, 3600, and 3700 Series Modular Access Platforms	<ul style="list-style-type: none"><li>• Reduces cost of maintaining inventory of Cisco 1600, 1700, 2600, and 3600 Series modular components</li><li>• Lower training costs for support personnel</li></ul>
Advanced Integration Module Slot	<ul style="list-style-type: none"><li>• Expandability for integration of advanced services such as hardware-assisted data compression, encryption, Voice and ATM</li><li>• Maximizes performance by off-loading processor intensive applications to a coprocessor</li><li>• Provides expanded services, freeing the NM slot for other applications</li></ul>
Choice of LAN Configurations	<ul style="list-style-type: none"><li>• Meets specific Telco DCN and CO Local Area Network requirements including single and dual LAN connections for auto-sensing 10/100Mbps Ethernet, mixed Ethernet and Token Ring environments</li></ul>
DC and AC Power Supply Options	<ul style="list-style-type: none"><li>• Allows deployment in DC power environments such as telecommunications carrier central offices or as a managed Customer Premise Equipment (CPE) platform with an AC power supply</li></ul>
<b>Service Provider/Carrier DCN-Class Performance</b>	



Table 1 Features and Benefits of the Cisco 2600 Series (Continued)

Features	Benefits
High-Performance Architecture	<ul style="list-style-type: none"> <li>• High-speed routing performance of up to 40,000 packets per second for maximum scalability to support more concurrent functions (Cisco 265xXM-DC)</li> <li>• Support for advanced QoS features such as the Resource Reservation Protocol (RSVP), Weighted Fair Queuing (WFQ), and IP Precedence to reduce recurring WAN costs</li> <li>• Support for up to 8 T1/E1 network connections</li> <li>• Up to 36 asynchronous or 12 synchronous connections are supported in a single Cisco 2600 enabling telemetry applications</li> <li>• Support for TDM traffic with drop and insert capability</li> <li>• AIM slot support to off-load processor intensive applications including hardware-based compression, encryption, ATM access, and Voice.</li> <li>• Enables security features such as data encryption, tunneling, and user authentication and authorization for virtual private network (VPN) access</li> <li>• Full Cisco IOS® Software Support</li> </ul>
Deployed in IP networks around the world, the Cisco IOS software supports the following DCN related services:	<ul style="list-style-type: none"> <li>• Full IP Routing Services including multiprotocol BGP, multi-Area ISIS and DNS</li> <li>• TL1 support including transport via X.25, TCP or OSI. TID Address Resolution Protocol (TARP) support and TARP Storm Avoidance support.</li> <li>• PPP services including WAN interface support for ISDN, Frame Relay, ATM, and X.25</li> <li>• X.25 support services including X.25 switching, X.3 Asynchronous PAD, DNS for X.25 address resolution, Hunt Groups, and SVC/PVC conversion</li> <li>• IP to X.25 Protocol Translation</li> <li>• BX.25 Transport over X.25 or TCP (XOT)</li> <li>• Support for up to 3 OSI/IS-IS areas, per chassis, essentially providing the same capabilities as 3 separate OSI routers.</li> <li>• Full-featured IP and OSI routing and mediation on a single platform, including legacy X.25, and async devices support Cisco IOS Firewall feature sets provide support for advanced security features such as Context-Based Access Control (CBAC), Java blocking, denial of service protection, and audit trails</li> <li>• Integration of legacy networks via data link switching plus (DLSW+) and Advanced Peer-to-Peer Networking (APPN)</li> </ul>
<b>Simplified Management</b>	
Common Language Equipment Identification (CLEI) Codes	<ul style="list-style-type: none"> <li>• Enables easy identification and tracking of central-office equipment</li> </ul>
Part of the Cisco DCN Stackable Solutions	<ul style="list-style-type: none"> <li>• Can be stacked with LAN switches such as the Catalyst 2950G-24-DC or Cisco 3662-AC/DC-CO modular access platform</li> </ul>
VLAN Support	<ul style="list-style-type: none"> <li>• Enables inter-VLAN routing via the Cisco Inter-Switch Link (ISL) protocol with the Cisco Catalyst 2950G-24-DC and 2924M XL DC switches and the Cisco 3662-AC/DC-CO when used with the Cisco 2600XM, 2620, 2621, 2650, 2651, and Cisco IOS "Plus" feature set</li> </ul>
Cisco Discovery Protocol (CDP) Support	<ul style="list-style-type: none"> <li>• Enables a CiscoWorks network management station to automatically discover the Cisco 2600 in a network topology.</li> </ul>



Table 1 Features and Benefits of the Cisco 2600 Series (Continued)

Features	Benefits
Integrated CSU/DSU, Analog Modem and NT1 Options	<ul style="list-style-type: none"><li>• Enables remote management of all CPE elements for higher network availability and lower operational costs</li></ul>
Support for Cisco Works and CiscoView	<ul style="list-style-type: none"><li>• Allows simplified management of all integrated and stackable components</li></ul>
Support for Cisco Voice Manager (CVM)	<ul style="list-style-type: none"><li>• Reduces the cost of deploying and managing integrated voice/data solutions</li></ul>
Enhanced Setup Feature	<ul style="list-style-type: none"><li>• Context-sensitive questions guide the user through the router configuration process, allowing faster deployment</li></ul>
Support for Cisco AutoInstall	<ul style="list-style-type: none"><li>• Configures remote routers automatically across a WAN connection to save cost of sending technical staff to the remote site</li></ul>
Cisco Configuration Express Support	<ul style="list-style-type: none"><li>• Enables quick and cost-effective deployment of large installations by ordering custom-configured platforms from Cisco</li></ul>
<b>Reliability</b>	
Dial-on-Demand Routing	<ul style="list-style-type: none"><li>• Allows automatic backup of WAN connection in case of a primary link failure</li></ul>
Dual Bank Flash Memory	<ul style="list-style-type: none"><li>• Backup copy of the Cisco IOS software can be stored in Flash memory</li></ul>
Redundant AC Power Supply Option	<ul style="list-style-type: none"><li>• AC RPS option can be shared with other network components such as the Cisco Catalyst 2950G-24-DC Series to protect CPE network from downtime due to power failures</li></ul>
<b>Ergonomic Design</b>	
LED Status Indicators	<ul style="list-style-type: none"><li>• Provide at-a-glance indications for power, RPS status, network activity, and interface status</li></ul>
All Network Interfaces Located on Back of Unit	<ul style="list-style-type: none"><li>• Simplifies installation and cable management for maximum uptime</li></ul>
Easy-to-Open Chassis Design	<ul style="list-style-type: none"><li>• Allows fast and easy access for installation of memory or AIM</li></ul>
Multispeed Fan	<ul style="list-style-type: none"><li>• Enables quiet operation in CPE environments</li></ul>



## Cisco IOS Software

Modeled after the Cisco 2500 and 3600, the Cisco 2600 Series supports a full range of Cisco Internetworking Operating System, (IOS) features. These feature sets include a wide variety of intranet, multiprotocol, QoS, and legacy IBM applications in use today. The Cisco 2600 Series offers several base protocol feature sets and a combination of premium feature options including the Plus, encryption and firewall feature sets.

The available IOS feature sets are:

- IP
- IP/IPX/Appletalk/DEC
- Remote Access Services
- Enterprise
- Enterprise APPN
- Telco

The Base feature sets support popular protocols and standards such as network address translation (NAT), open shortest path first (OSPF), Border Gateway Protocol (BGP), Remote Access Dial-In User Service (RADIUS), IP Multicast, remote monitoring (RMON), and WAN optimization features (such as Bandwidth on Demand; Custom, Priority and WFQ, Dial Back-up and RSVP).

Some base feature sets are offered in combination with premium capabilities found in the Plus, Firewall and Encryption feature sets. The Plus feature sets contain additional value-added features such as, L2TP, L2F, Voice/Data integration, legacy mainframe protocols, DLSw, Asynchronous Transfer Mode (ATM), virtual LANs (VLANs), Netflow, etc. Additional premium security oriented features include IPSec, and 3DES encryption as well as Firewall capabilities.

The Cisco IOS® Telco feature set is a specialized image for service providers. This optimized Cisco IOS image supports IP, X.25/PAD, X.25/IP protocol translations, and all OSI routing and protocol translation features. This image offers the service provider the critical network-management features required to manage a diverse network topology. The Cisco IOS Telco image enhances memory utilization by stripping away underutilized features such as Appletalk and Banyan Vines. This Cisco IOS image is specific to the Cisco DCN environment, and is not available with Cisco IOS 12.2.2T.

The Enterprise Plus feature set is the Cisco comprehensive offering of protocols, standards, and value-add networking capabilities. This feature set includes a broad array of QoS, LAN and WAN protocols including legacy mainframe protocols, protocol translation, remote node and terminal services. Additionally, the Enterprise Plus feature set includes a number of telco-oriented features, such as OSI and X.25 Pad, IP/X.25 protocol translation, request for comment (RFC) 1613-XOT, TL1 transport and TARP Storm Avoidance.

The Remote Access Services feature set includes various management, multicast, security (excluding encryption), protocol translation, remote node and terminal services and some LAN and WAN service and optimization protocols but excludes some of the capabilities found in the Enterprise Plus feature set.

A more detailed list of features can be found in the Cisco 2600 IOS release notes. The memory requirements for a given feature set can be found in the Cisco 2600 software features and memory requirements product bulletin. Some Cisco IOS feature sets require additional memory. Refer to Table 8 for memory default configurations.



## NEBS Compliance

The optional NEBS Level 3/ETSI kit ensures a Cisco 2600 modular access platform meets NEBS Level 3/ETSI standards for networking equipment usually found in the central office. This kit is available for the Cisco 261x and Cisco 262x Series as a spare (ACS-2600NEBS/ETSI=). This kit also includes the 23/24 inch rack mount kit for Hendry Bays.

## Regulatory Compliance

The Cisco 2600-DC module access platform conforms to a number of safety, EMI, immunity and network homologation standards. Details of the regulatory specifications are included at [http://www.cisco.com/kobayashi/Support\\_root.shtml](http://www.cisco.com/kobayashi/Support_root.shtml).

## Year 2000 Compliance

For detailed Year 2000 compliance information on the Cisco 2600 Series, reference Cisco's Year 2000 Compliance Web site at <http://www.cisco.com/warp/customer/752/2000/>.

## Network Module Options

The Cisco 2600 Series supports the Network Modules listed in Table 2; these modules are shared with the Cisco 3600 and 3700 Series.

Table 2 Network Modules supported on the Cisco 2600 Series

Serial and ATM NMs (requires IOS release 11.3 (3)T or later) Product Number	Description	Cisco 261x-265x	Cisco 2600XM
NM-4T1-ATM <sup>1,2</sup>	4-port T1 ATM with IMA NM	X	X
NM-4E1-ATM <sup>1,2</sup>	4-port E1 ATM with IMA NM	X	X
NM-8T1-ATM <sup>1,2</sup>	8-port T1 ATM with IMA NM	X	X
NM-8E1-ATM <sup>1,2</sup>	8-port E1 ATM with IMA NM	X	X
NM-1A-T3 <sup>1,6</sup>	1-Port DS3 ATM NM	X	X
NM-1A-E3 <sup>1,6</sup>	1-Port E3 ATM NM	X	X
NM-16A	16-port high density async NM	X	X
NM-32A	32-port high density async NM	X	X
NM-4A/S	4-port low speed (128 Kbps max) async/sync serial NM	X	X
NM-8A/S	8-port low speed (128 Kbps max) async/sync serial NM	X	X





LAN/LAN/WAN NMs Product Number	Description	Cisco 261x-265x	Cisco 2600XM
NM-2W	Two-WAN interface card slot network module, (WAN I/F cards offered separately)	X	X
NM-1E	1-port Ethernet network module	X	X
NM-4E	4-port Ethernet network module	X	X
NM-1ATM-25	1-port ATM 25Mbps network module	X	X

Dial, ISDN, Analog Modems & Chan Serial NM (11.3 (4) T or later) Product Number	Description	Cisco 261x-265x	Cisco 2600XM
NM-1CT1	1-port channelized T1/ISDN PRI network module	X	X
NM-1CT1-CSU	1-port channelized T1/ISDN PRI with CSU network module	X	X
NM-2CT1	2-port channelized T1/ISDN PRI network module	X	X
NM-2CT1-CSU	2-port channelized T1/ISDN PRI with CSU network module	X	X
NM-1CE1B	1-port channelized E1/ISDN PRI balanced network module	X	X
NM-1CE1U	1-port channelized E1/ISDN PRI unbalanced network module	X	X
NM-2CE1B	2-port channelized E1/ISDN PRI balanced network module	X	X
NM-2CE1U	2-port channelized E1/ISDN PRI unbalanced network module	X	X
NM-4B-S/T	4-port ISDN BRI network module (S/T interface)	X	X
NM-4B-U	4-port ISDN BRI with NT-1 network module (U interface)	X	X
NM-8B-S/T	8-port ISDN BRI network module (S/T interface)	X	X
NM-8B-U	8-port ISDN BRI with NT-1 network module (U interface)	X	X
NM-8AM	8 analog modem network module	X	X



Dial, ISDN, Analog Modems & Chan Serial NM (11.3 (4) T or later) Product Number	Description	Cisco 261x-265x	Cisco 2600XM
NM-16AM	16 analog modem network module	X	X

Voice/Fax NMs Product Number	Description	Cisco 261x-265x	Cisco 2600XM
NM-HDV-1T1-12 <sup>1,2</sup>	12-channel T1 high density voice/fax network module	X	X
NM-HDV-1E1-12 <sup>1,3</sup>	12-channel E1 high density voice/fax network module	X	X
NM-HDV-1T1-24 <sup>1,2</sup>	24-channel T1 high density voice/fax network module	X	X
NM-HDV-1T1-24E <sup>1,2</sup>	24-channel T1 enhanced high density voice/fax network module	X	X
NM-HDV-1E1-30 <sup>1,3</sup>	30-channel E1 high density voice/fax network module	X	X
NM-HDV-1E1-30E <sup>1,3</sup>	30-channel enhanced E1 high density voice/fax network module	X	X
NM-HDV-2T1-48 <sup>1,2</sup>	48-channel T1 high density voice/fax network module	X	X
NM-HDV-2E1-60 <sup>1,3</sup>	60-channel E1 high density voice/fax network module	X	X
NM-1V <sup>1</sup>	1-slot voice/fax network module	X	X
NM-2V <sup>1</sup>	2-slot voice/fax network module	X	X
NM-16ESW-PWR <sup>4</sup>	16Port 10/100 Etherswitch NM with Power card	X	X
NM-16ESW <sup>4</sup>	16Port 10/100 Etherswitch NM	X	X
EM-HDA-8FXS <sup>4</sup>	8 port voice/fax expansion module FXS	X	X
NM-HDA-4FXS <sup>4</sup>	High Density analog voice/fax network module with 4 FXS	X	X
EM-HDA-4FXO <sup>4</sup>	4 port voice/fax expansion module FXO	X	X
NM-HDV-1J1-30 <sup>5</sup>	1-Port 30-Channel J1 High-Density Voice Network Module	X	X
NM-HDV-1J1-30E <sup>5</sup>	1-Port 30-Enhanced Channel J1 High-Density Voice Network	X	X



1. The voice/fax and ATM NMs require a Cisco IOS Plus feature set.
2. Requires Cisco IOS Version 12.05XK, 12.07T, 12.1, 12.1T, 12.2, 12.2T or later.
3. Requires Cisco IOS Version 12.07XK, 12.12T, 12.2, 12.2T or later.
4. Requires Cisco IOS Version 12.2(2)XT, 12.2(8)T or later
5. Requires Cisco IOS Version 12.2(8)T or later
6. Requires Cisco IOS Version 12.1.2T or later.

## Alarm Interface Controller Network Module

The Alarm Interface Controller (AIC) is a network module that greatly expands the network monitoring and control capabilities of the Cisco 2600 and 3600 Series routers. The AIC functions as an integrated entity residing within the Cisco 2600 Router to provide network alarm monitoring and remote control of network elements. The AIC reduces service provider and enterprise operating expenses by facilitating a “single box” solution, doing away with the need for a dedicated external alarm monitoring device. This greatly simplifies network layout, monitoring, and control resulting in lower operations, administration, maintenance, and provisioning (OAM&P) costs. The AIC is supported in Cisco IOS® 12.2(2)XG and 12.2(8)T. The AIC network module supports 64 discrete alarm monitoring points, of which 8 of the last 64 alarm points are software- configurable to accept either analog or discrete inputs. The AIC further supports 16 control relays to facilitate the remote control of network elements.

Table 3 Alarm Interface Controller (AIC) Network Module

Alarm Interface Controller (AIC) Network Module Product Number	Description	Cisco 261x-265x	Cisco 2600XM
NM-AIC-64 <sup>1</sup>	Alarm monitoring and control NM; 64 contact points and 16 control points	X	X

1. Requires Cisco IOS Version 12.2(2)XG and 12.2(7)T or later

## WAN Interface Card Options

The Cisco 2600 Series supports all WAN Interface Cards available for the Cisco 1600, 1700, 3600, and 3700 Series, as well as two new dual-port serial WAN interface cards to maximize interface density and slot efficiency. The new dual-serial port WAN interface cards feature Cisco's new, compact, high-density Smart Serial connector to support a wide variety of electrical interfaces when used with the appropriate transition cable.

Figure3

Dual-Port High-Speed Serial WIC (up to 2 Mbps/Port)

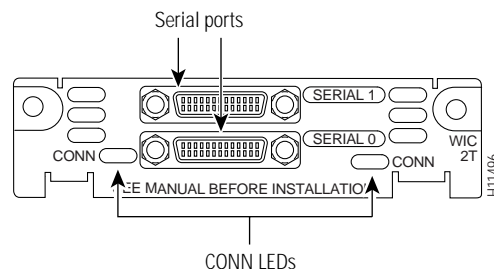




Figure 4  
Dual-Port Async/Sync Serial WIC (up to 128 Kbps/Port)

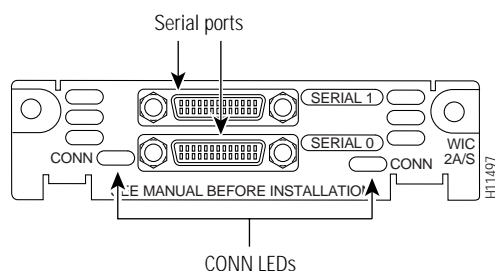


Table 4 WAN Interface Cards for the Cisco 2600 Series

Cisco 2600 Series WAN WICs Product Number	Description	Cisco 261x-265x	Cisco 2600XM
WIC-1DSU-T1 <sup>1</sup>	T1/Fractional T1 CSU/DSU	X	X
WIC-1DSU-56K <sup>4</sup>	1-port four-wire 56/64 Kbps CSU/DSU	X	X
WIC-1T	1-port high speed serial	X	X
WIC-2T	2-port high speed serial	X	X
WIC-2A/S	2-port async/sync serial	X	X
WIC-1B-S/T	1-port ISDN BRI	X	X
WIC-1B-U	1-port ISDN BRI with NT1	X	X
WIC-1AM <sup>5</sup>	1-port Analog Modem interface card	X	X
WIC-2AM <sup>5</sup>	2-port Analog Modem interface card	X	X
WIC-ADSL <sup>3</sup>	1-port ADSL WAN Interface	X	X
WIC-1SHDSL <sup>4</sup>	1-port G.SHDSL WAN Interface	X	X

1. Requires Cisco IOS 12.0(5)XK or later.

2. Requires Cisco IOS 12.1(1)T or later.

3. Requires Cisco IOS 12.1(5)YB, 12.2(2)XK, 12.2(4)T or later.

4. Requires Cisco IOS 12.2(4)XL or later.

5. Requires Cisco IOS 12.2(2)XB or later and IOS IP Plus feature set



Table 5 Voice Interface Cards for Use with the Voice/Fax Network Modules Module

Voice Interface Cards supported for use with the Voice/Fax NMs			
Product Number	Description	Cisco 261x-265x	Cisco 2600XM
VIC-2BRI-S/T-TE <sup>1</sup>	2-port BRI S/T terminal equipment voice/fax interface card for voice/fax NM	X	X
VIC-2BRI-NT/TE3	2-port BRI (NT and TE) Voice Interface module	X	X
VIC-2FXS	2-port FXS voice/fax interface card for voice/fax NM	X	X
VIC-2FXO-M1 <sup>2</sup>	2-port FXO voice/fax interface card for voice/fax NM w/ Caller ID & supervisory disconnect (North American version and other countries)	X	X
VIC-2FXO	2-port FXO voice/fax interface card for voice/fax network module (North American version and other countries)	X	X
VIC-2FXO-M2 <sup>2</sup>	2-port FXO voice/fax interface card with Caller ID and supervisory disconnect (Europe version)	X	X
VIC-2FXO-EU	2-port FXO voice/fax interface card (Europe version)	X	X
VIC-2FXO-M3	2-port FXO voice/fax interface card for Australia	X	X
VIC-2E/M	2-port E&M voice/fax interface card for voice/fax network module	X	X
VIC-2DID	2-port DID (Direct Inward Dial) voice/fax interface card	X	X

1. Supported with Cisco IOS 12.0(3)T or later

2. Supported with Cisco IOS 12.1(2)XH or later



Table 6 Cisco 2600 Series Supported Multiflex Voice/WAN Interface Cards for Use with Voice/Fax Network Modules and as a Standalone WAN Interface

Cisco 2600 Series Multiflex Voice/WAN WICs Product Number	Description	Cisco 261x-265x	Cisco 2600XM
VWIC-1MFT-T1 <sup>1</sup>	1-port T1/Fractional T1 Multiflex Trunk with CSU/DSU	X	X
VWIC-2MFT-T1 <sup>1</sup>	2-port T1/Fractional T1 Multiflex Trunk with CSU/DSU	X	X
VWIC-2MFT-T1-DI <sup>1</sup>	2-port T1/Fractional T1 Multiflex Trunk with CSU/DSU and Drop & Insert	X	X
VWIC-1MFT-E1 <sup>1</sup>	1-port E1/Fractional E1 Multiflex Trunk with DSU	X	X
VWIC-2MFT-E1 <sup>1</sup>	2-port E1/Fractional E1 Multiflex Trunk with DSU	X	X
VWIC-2MFT-E1-DI <sup>1</sup>	2-port E1/Fractional E1 Multiflex Trunk with DSU and Drop & Insert	X	X
VWIC-1MFT-G703 <sup>2</sup>	1-port G.703 Multiflex Trunk	X	X
VWIC-2MFT-G703 <sup>2</sup>	2-port G703 Multiflex Trunk	X	X

1. Requires Cisco IOS 12.0(5)XK or later.

2. Requires Cisco IOS 12.1(1)T or later.

### Advanced Integration Module Options

All Cisco 2600 Series are equipped with an internal slot to support one or two field-installable AIMs. AIMs use function-specific hardware to off-load the main router CPU and accelerate processor- or resource-intensive services, yielding dramatically higher throughput and higher performance than a software-only implementation. The AIM slot has access to virtually all of the router's resources, including the main system bus. The TDM bus and the serial communications controllers make this a very flexible and powerful feature. Since the AIM is internally mounted, external slots remain available for integration of other modular components such as CSU/DSUs, WAN interfaces, or other devices such as modems, or packetized voice/fax processors.

The Data Compression AIM provides a cost-effective option for reducing recurring WAN costs and maximizes the benefit of the advanced bandwidth management features of the Cisco IOS software. With compression ratios of up to 4:1, the Data Compression AIM supports 8Mbps of compressed data throughput without imposing additional traffic latency—enough to keep two T1 or E1 circuits full of compressed data in both directions simultaneously. The Data Compression AIM supports industry standard LZS and Microsoft Point-to-Point Compression (MPPC) algorithms and ensures compatibility with all Cisco products supporting hardware- or software-based compression.

The Data Encryption AIM offloads encryption processing from the Cisco 2600 Series CPU, providing 10 times the performance over software-only encryption. The AIM-VPN/BP supports a maximum number of 300 remote access tunnels and a maximum of 800 remote access tunnels when using the Cisco 2600XM models. In comparison, the



AIM-VPN/EP provides support for a maximum number of 800 remote access tunnels, but also provides greater triple Data Encryption Standard (3DES) performance when compared to the AIM-VPN/BP. The AIM-VPN/EP is designed to take advantage of the performance power of the Cisco 265x and Cisco 265xXM and is recommended with these models.

The new AIM-ATM provides a high-performance hardware-based ATM access solution for one to four T1 or E1 connections supported by the T1 or E1 VWICs (for example, VWIC-IMFT-T1). This frees the network module slot to support other functions. When used in combination with a high density voice network module (NM-HDV-xxx), the ATM AIM supports ATM adaptation layer (AAL) 2 and AAL5 VoATM. In addition, the new ATM-VOICE-30 and ATM-ATM-VOICE-30 AIMS provides a cost effective solution for supporting voice services or digital voice over ATM (AAL2 and AAL5) support, without the use of a network module.

Table 7 Advanced Integration Module for the Cisco 2600 Series

Cisco 2600 Series AIMS Product Number	Description	Cisco 261x-265x	Cisco 2600XM
AIM-COMPR2	Data Compression AIM for the Cisco 2600 Series (requires IOS software release 12.02T or later)	X	X
AIM-VPN/BP	Data Encryption AIM for the Cisco 2600 series—Base Performance	X	X
AIM-VPN/EP <sup>1</sup>	Data Encryption AIM for the Cisco 2600 series—Enhanced Performance	X	X
AIM-ATM	High Performance ATM Advanced Integration Module	X	X
AIM-VOICE-30	30 Channel T1/E1 Digital Voice Module (requires IOS software release IOS 12.2(2)XB or later)	X	X
AIM-ATM-VOICE-30	ATM SAR and 30 Channel T1/E1 Digital Voice Module (requires IOS software release IOS 12.2(2)XB or later)	X	X

1. Recommended with the Cisco 265x and 265xXM

Table 8 Cisco 2600 Series System Specifications

Cisco 2600 Series System Specifications	2610-12	2620/21	2650/51	2610/ 11XM	2620/ 21XM	2650/ 51XM
Processor Type	40MHz CPU	50MHz CPU	80MHz CPU	40MHz CPU	50MHz CPU	80MHz CPU
Performance	15Kpps	25Kpps	37Kpps	20Kpps	30Kpps	40Kpps
Flash Memory (Default/Max)	8MB/16MB	8MB/32MB	8MB/32MB	16MB/ 48MB	16MB/ 48MB	16MB/ 48MB



Table 8 Cisco 2600 Series System Specifications

Cisco 2600 Series System Specifications	2610-12	2620/21	2650/51	2610/11XM	2620/21XM	2650/51XM
System Memory (Default/Max)	32MB/64MB	32MB/64MB	32MB/128MB	32MB/128MB	32MB/128MB	64MB/128MB
Integrated WIC Slots	2	2	2	2	2	2
Onboard AIM (Internal) Slot	1	1	1	1	1	1
Console Port (up to 115.2 kbps)	1	1	1	1	1	1
Aux Port (up to 115.2 kbps)	1	1	1	1	1	1
Minimum Cisco IOS Release	11.3T or later and 12.0.1 mainline	12.0(3)T or later and 12.1.1 mainline	12.1(3)T or later and 12.2.1 mainline	12.1(14) mainline, 12.2(12) mainline (future), 12.2(8)T1 or later	12.1(14) mainline, 12.2(12) mainline (future), 12.2(8)T1 or later	12.1(14) mainline, 12.2(12) mainline (future), 12.2(8)T1 or later
Onboard LAN Ports	1 to 2 Ethernet ports 2612—1TR/1E	1 to 2 10/100 FE ports	1 to 2 10/100 FE ports	1 to 2 10/100 FE ports	1 to 2 10/100 FE ports	1 to 2 10/100 FE ports
Redundant Power Supply	External only	External only	External only	External only	External only	External only
Rack Mounting	Yes, 19' and 23" options	Yes, 19' and 23" options	Yes, 19' and 23" options	Yes, 19' and 23" options	Yes, 19' and 23" options	Yes, 19' and 23" options
Wall Mounting	Yes	Yes	Yes	Yes	Yes	Yes
Power Supply	50W Maximum (+5V,+12V,-12V) AC power supply	50W Maximum (+5V,+12V,-12V) AC power supply	50W Maximum (+5V,+12V,-12V) AC power supply	50W Maximum (+5V,+12V,-12V) AC power supply	50W Maximum (+5V,+12V,-12V) AC power supply	50W Maximum (+5V,+12V,-12V) AC power supply
Power Output	5V@9.5A, 12V@1.20 A, -12V@0.5A	5V@9.5A, 12V@1.20 A, -12V@0.5A	5V@9.5A, 12V@1.20 A, -12V@0.5A	5V@9.5A, 12V@1.20 A, -12V@0.5A	5V@9.5A, 12V@1.20 A, -12V@0.5A	5V@9.5A, 12V@1.20 A, -12V@0.5A
AC Power Dissipation	170W (max.)	170W (max.)	170W (max.)	170W (max.)	170W (max.)	170W (max.)
AC input voltage	100 to 240VAC	100 to 240VAC	100 to 240VAC	100 to 240VAC	100 to 240VAC	100 to 240VAC





Table 8 Cisco 2600 Series System Specifications

Cisco 2600 Series System Specifications	2610-12	2620/21	2650/51	2610/11XM	2620/21XM	2650/51XM
DC Input Voltage	-38 to -75VDC	-38 to -75VDC	-38 to -75VDC	-38 to -75VDC	-38 to -75VDC	-38 to -75VDC
DC Input Current	Current: 2.0 amps	Current: 2.0 amps	Current: 2.0 amps	Current: 2.0 amps	Current: 2.0 amps	Current: 2.0 amps
DC Power Dissipation	75W (maximum)	75W (maximum)	75W (maximum)	75W (maximum)	75W (maximum)	75W (maximum)
Frequency	47-63Hz	47-63Hz	47-63Hz	47-63Hz	47-63Hz	47-63Hz
AC input current	1.5 amps	1.5 amps	1.5 amps	1.5 amps	1.5 amps	1.5 amps
Operating temperature	-32 to 104 F (0 to 40 C)	-32 to 104 F (0 to 40 C)	-32 to 104 F (0 to 40 C)	-32 to 104 F (0 to 40 C)	-32 to 104 F (0 to 40 C)	-32 to 104 F (0 to 40 C)
Nonoperating temperature	-40 to 158 F (-40 to 70 C)	-40 to 158 F (-40 to 70 C)	-40 to 158 F (-40 to 70 C)	-40 to 158 F (-40 to 70 C)	-40 to 158 F (-40 to 70 C)	-40 to 158 F (-40 to 70 C)
Relative Humidity Noncondensing	5-95%	5-95%	5-95%	5-95%	5-95%	5-95%
Operation altitude (derate 1C per 1,000 ft.)	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C	Up to 6500 ft (2000m) @ 40 C
Dimensions (HxWxD)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)	1.69" (4.3 cm) x 17.5" (44.5 cm) x 11.8" (30 cm)
Rack Height	1RU	1RU	1RU	1RU	1RU	1RU
Weight (min.)	8.85 lb (4.66 kg)	8.85 lb (4.66 kg)	8.85 lb (4.66 kg)	8.85 lb (4.66 kg)	8.85 lb (4.66 kg)	8.85 lb (4.66 kg)
Noise Level (min.)	38-dBA	38-dBA	38-dBA	38-dBA	38-dBA	38-dBA
Safety	All Platforms—UL 60950:2000, NOM019:1998, EN 60950:1992+A1+A2+A3+A4, ACATS 001: 1993 ACA AS3260:1997					
Regulatory Compliance:	All Platforms—FCC Class A and Canadian DOC Class A, EN55022:1998, CISPR22:1997, EN61000-3-2:1995, EN61000-3-3:1995, EN300386:2000, EN55024/EN55082-1, AS/NZS3548:1998, 47-CFR-15:1997, VCCI-V-3/2000, VCCI Class A, CNS 13438					

## Cisco Service and Support

Leading-edge technology deserves leading-edge support. Service and support for the Cisco 2600 Series is available on a one-time or annual contract basis. Support options range from help desk assistance to proactive, onsite consultation.

All support contracts include:

- Major Cisco IOS software updates in protocol, security, bandwidth, and feature improvements

- Full access rights to Cisco Connection Online (COO) for technical assistance, electronic commerce, and product information
- 24-hour-a-day access to the industry's largest dedicated technical support staff

A support contract maximizes the value of your technology investment throughout its lifecycle, ensuring optimum performance and availability. Augment your internal staff's capabilities by leveraging the Cisco expertise.

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